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10/694,975	10/28/2003	Lang H. Nguyen	03089	4434

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EXAMINER

BERNSHTEYN, MICHAEL

ART UNIT

PAPER NUMBER

1713

DATE MAILED: 08/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/694,975

Applicant(s)

NGUYEN, LANG H.

Examiner

Michael Bernshteyn

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 7-8 and 13-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims recite "molecular weight", but there is no explanation in the specification, is it weight-average or number-average molecular weight? Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
2. Claims 1-22 and 31-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Martin et al. (U. S. Patent Application Publication 2003/0191231).

Martin discloses aqueous ambient temperature crosslinkable and shelf stable polyester polymer compositions, which provide coatings having improved open and wet edge times as well as good tack-free times (page 1, [0001]).

With regard to the limitations of claims 1-4, Martin discloses that the crosslinkable polyester oligomer(s) preferably contains a sufficient concentration of bound hydrophilic water-dispersing groups capable of rendering the oligomer self water-dispersible, but the concentration of such groups is preferably not so great that the oligomer has an unacceptably high water solubility in order to not compromise the water sensitivity of the final coating. The type of hydrophilic groups capable of rendering the crosslinkable polyester oligomer(s) water-dispersible are well known in the art, and can be ionic water-dispersing groups or **non-ionic water-dispersing groups**. Preferred non-ionic water-dispersing groups are **polyalkylene oxide groups**, more preferably **polyethylene oxide groups**. A small segment of the polyethylene oxide group can be replaced by **propylene oxide segment(s)** and/or **butylene oxide segment(s)**,

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however the polyethylene oxide group should still contain ethylene oxide as a major component (page 4, [0062]-[0063]).

There are many examples of carboxylic acids (or their ester forming derivatives) which can be used in polyester oligomer(s) synthesis for the provision of the monomer(s) providing an acid component. Examples include, but are not limited to monofunctional acids such as (alkylated) benzoic acid and hexanoic acid; and C₄ to C₂₀ aliphatic, alicyclic and aromatic dicarboxylic acids (or higher functionality acids) or their ester-forming derivatives (such as anhydrides, acid chlorides, or lower alkyl esters) (page 6, [0073]).

With regard to the limitations of claims 5 and 6, Martin discloses that suitable non-ionic hydrophilic water dispersing groups include for example ethylene oxide-containing **hydroxy functional compounds** such as alkoxypolyethylene glycols and polyethylene glycols. Preferably the hydrophilic water-dispersing groups are carboxylic acid groups, sulphonic acid groups or sulphonate anion groups (page 6, [0078]).

With regard to the limitations of claims 7 and 8, Martin discloses that preferably the polyethylene oxide group has a Mw from 175 to 5000 Daltons, more preferably from 350 to 2200 Daltons, most preferably from 660 to 2200 Daltons, which is within the claimed range (page 4, [0063]).

With regard to the limitations of claim 9, Martin discloses that preferably at least 30%, more preferably at least 60%, most preferably at least 90% and especially at least 94% by weight of the dispersed polymer(s) is present as **insoluble** polymer over the whole pH range (page 7, [0090]).

With regard to the limitations of claim 10-12, 15 and 33, Martin discloses NeoCryl BT-24 (acrylic emulsion polymer), which is exemplified in the specification (Example 1, page 13).

With regard to the limitations of claims 13 and 14, Martin discloses that the crosslinkable polyester oligomer(s) preferably has a weight average molecular weight (Mw) in the range of from 1000 to 100,000 Daltons, preferably in the range of from 1000 to 80,000 Daltons, more preferably in the range of from 1000 to 50,000 Daltons, most preferably in the range of from 1000 to 20,000 Daltons, which is within the claimed range (page 5, [0067]).

With regard to the limitations of claims 16-18, Martin discloses that the crosslinkable polyester oligomer(s) may be completely water-soluble (which is less preferred) or only have partial solubility in water. The polyester oligomer(s) may be dispersed in water using techniques well known in the art. An aqueous dispersion of the polyester oligomer(s) may be readily prepared by adding water directly to the hot polyester oligomer(s) melt until the desired solids content/viscosity is reached. Alternatively the polyester oligomer(s) may be dispersed in water by adding an aqueous pre-dispersion (page 4, [0061], page 7, [0084]).

With regard to the limitations of claims 19 and 20, Martin discloses that the crosslinkable polyester oligomer(s) may crosslink at ambient temperature by a number of mechanisms including but not limited to autoxidation, Schiff base crosslinking and silane condensation. By Schiff base crosslinking is meant that crosslinking takes place by the reaction of a carbonyl functional group(s), where by a carbonyl functional group

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herein is mean an aldo or keto group and including an enolic carbonyl group such as is found in an acetoacetyl group, with a carbonyl-reactive amine and/or hydrazine (or blocked amine and/or blocked hydrazine) functional group (page 3, [0057]).

With regard to the limitations of claim 21, Martin discloses that if the anionic water-dispersing groups are neutralized, the base used to neutralize the groups is preferably ammonia, an amine or an inorganic base (page 5, [0065]).

With regard to the limitations of claim 22, Martin discloses that the aqueous coating composition may contain other conventional ingredients including pigments, dyes, emulsifiers, surfactants, plasticizers, thickeners, and other additives (page 12, [0150]).

With regard to the limitations of claim 31, Martin discloses an aqueous coating composition additionally comprising a pigment (page 26, claim 25).

With regard to the limitations of claim 32, Martin discloses that the dispersed polymer(s) may for example be vinyl polymer, polyester, polyamide, polyepoxide, or a mixture thereof. The dispersed polymer(s) may also be a hybrid of two or more different polymer types such as urethane-acrylic polymers, epoxy-acrylic polymers and polyester-acrylic polymers (page 8, [0098]).

With regard to the limitations of claims 34 and 35, Martin discloses that preferably the solids content of the aqueous coating composition when determining the equilibrium viscosity is in the range of from 20 to 60%, more preferably in the range of from 20 to 65%, most preferably in the range of from 20 to 70%, especially in the range of from 20 to 75%, which is within the claimed range (page 3, [0045]).

3. Claims 23-30 and 36-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. in view of Johnson et al. (U. S. Patent 5,837,045).

The disclosure of Martin's reference resided in § 2 is incorporated herein by reference.

With regard to the limitations of claims 23-30 and 36-41, Martin does not disclose the limitations for the pigment and the pigment composition.

With regard to the limitations of claims 23-30 and 36-41, Johnson discloses a surface-modified colored pigment which includes a colored pigment having no primary amines and at least one attached hydrophilic organic group, wherein said organic group comprises a) at least one aromatic group, and b) at least one **ionic group** or **ionizable group**, or a **mixture of an ionic group or an ionizable group**. The surface-modified colored pigment, due to the hydrophilic groups on its surface, is readily dispersed in a **liquid vehicle** without the addition of a surfactant or other dispersing aid or additive. The surface-modified color pigment may be used in a variety of aqueous systems including, but not limited to, **coatings**, paints, papers, adhesives, latexes, inks, toners, textiles and fibers. In addition, **an aqueous composition** is disclosed including **water-based liquid vehicle** and the surface-modified colored pigment described above (abstract).

The hydrophilic organic group of the surface-modified colored pigment has at least one aromatic group, and at least one ionic group or ionizable group. A preferred set of organic groups which may be attached are organic groups substituted with an ionic or an ionizable group as a functional group. An ionizable group is one capable of

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forming an **ionic group** in the medium of use. The ionic group may be an **anionic group** or a cationic group and the ionizable group may form an anion or cation (col. 3, lines 9-17).

Johnson discloses that most preferably, the organic group is a substituted or unsubstituted sulfophenyl group or a salt thereof; a substituted or unsubstituted **carboxyphenyl**; a substituted or unsubstituted (polysulfo)phenyl group or a salt thereof; a substituted or unsubstituted **sulfonaphthyl group or a salt thereof**; or a substituted or unsubstituted (polysulfo)naphthyl group or a salt thereof (col. 3, lines 37-44).

Johnson discloses that the surface-modified colored pigment may be used in aqueous compositions containing conventional pigments (col. 4, lines 36-38).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the surface-modified colored pigment which includes at least one attached hydrophilic organic group as taught by Johnson in Martin's dispersant polymer composition ⁱⁿ ~~to~~ order to obtain the compositions which exhibit improved latency and improved water fastness (US'045, col. 4, lines 47-49). Such aqueous compositions include, for example, automotive and industrial coatings, paints, papers, toners, inks, adhesives, latexes, textiles and fibers. The surface-modified colored pigment may be tailored to provide compatibility with the particular aqueous system and provide easier, more complete dispersion, improved colloidal stability and greater color intensity and shades (US'045, col. 2, lines 1-9), and thus to arrive at the subject matter of instant claims 23-30 and 36-41. 21

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Bernshteyn whose telephone number is 571-272-2411. The examiner can normally be reached on M-F 8-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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